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09/821,370	03/29/2001	Todd P. Beach	TMADE.067A	3442

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EXAMINER

VARMA, SNEH K

ART UNIT

PAPER NUMBER

3711

DATE MAILED: 10/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/821,370

Applicant(s)  
Beach et al.

Examiner  
Sneh Varma

Art Unit  
3711



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) None is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☒ Claim(s) None is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2,3,4 6) ☐ Other:

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## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a) because they fail to show the following:

- a.. Mass 11 in Figure 1. The center of mass 11 is not identified in Figure 1 as stated in the specification, page 4, line 9.
- b. C6 should be CG in Figure 4. C6 in Figure 4 should be CG as called out in the specification, page 6, line 5 and 13.

Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The disclosure is objected to because of the following informalities:

On Page 9, lines 16 and 22 the term  $I_{xx}$  should be  $I_{yy}$  as described on Page 4, line 24 for a moment of inertia about the heel/toe axis 28.

In reference to the moment of inertia about the vertical axis, in the specification on Page 10, lines 5, the recitation of “at least 250 kilograms per millimeter squared” and in line “at least

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300 kilograms per millimeter squared” differs from the recitation of “at least 250 kilograms millimeters squared (kg-mm<sup>2</sup>)” and “at least 300 kilograms millimeters squared (kg-mm<sup>2</sup>)” on lines 27-28. The Applicant is required to be consistent in description and the use of Units.

In addition, units for moment of inertia in Claims 1 and 2 are recited as kilograms millimeters squared (kg-mm<sup>2</sup>) and in Claims 20 and 21 the units for moment of inertia are recited as kilograms per square meter. The Applicant is required to make appropriate corrections.

The description fails to meet the requirement for the use of metric system units of measurements in Patent applications. A correction is required, see MPEP 608.01, Page 600-58, Column 2, 3rd paragraph.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 26 recites the limitation "said plurality of weights" in line 2. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102/103***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless -

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-2, 5-7, 11, and 20-22 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Helmstetter et al. '6836 (Helmstetter).

Helmstetter discloses a club head 20 (Figures 9-11A) for a golf club, the club head comprising a strike face 26 and an outer shell defining a head volume of the club head, a center of gravity CG (Page 4, line [0073], and the center of gravity CG lying below a horizontal centerline of the club head (see Figure 11A).

Helmstetter also discloses the club head having a volume that ranges from 300 to 600 cubic centimeters, a first moment of inertia  $I_{yy}$  about a first axis Y that extends generally horizontally and parallel to the strike face (see Figure 10B) that ranges from 190 kg-mm<sup>2</sup> to 250

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kg-mm<sup>2</sup> (Page 7, Claim 15), and a second moment of inertia  $I_{zz}$  about a second axis Z that lies generally vertically and perpendicular to the first horizontal axis that ranges from 300 kg-mm<sup>2</sup> to 500 kg-mm<sup>2</sup> (Page 7, Claim 15).

Regarding Claims 5-7, Helmstetter discloses that the club head mass is between 150 grams to 250 grams.

Regarding Claim 11, Helmstetter discloses that the club head volume is greater than 300 cubic centimeters (cc) (see line [0015]), regarding Claims 20 and 21, Helmstetter discloses that the second moment of inertia  $I_{zz}$  is greater than 250 and greater than 300 kg-mm<sup>2</sup>, respectively; regarding Claim 22, Helmstetter discloses that the club head includes a plurality of weights (Figures 9-9C; lines [ 0067]-[0069]).

However, regarding Claims 1 and 2, Helmstetter fails to disclose a relationship between the club head volume and the first moment of inertia,  $I_{yy}$ , as claimed by the Applicant. Applying the applicant's equation for the moment of inertia as recited in Claim 1 to a club head volume of 376 cubic centimeters that lies within Helmstetter's range of volumes gives a moment of inertia  $I_{yy}$  of 250 kg-mm<sup>2</sup>, within the Applicants range of values for  $I_{yy}$ . Likewise, applying the applicant's equation for the moment of inertia as recited in Claim 2 to a club head volume of 310 cubic centimeters that lies within Helmstetter's range of volumes gives a moment of inertia  $I_{yy}$  of 250 kg-mm<sup>2</sup>, within the Applicants range of values for  $I_{zz}$ .

Using the Applicant's definition for the moment of inertia of the club head having a first moment of inertia about a first axis Y that extends generally horizontally and parallel to the strike

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face, a second moment of inertia about a second axis Z that lies generally vertically and perpendicular to the first horizontal axis and the Applicant's equations for computing the moment of inertia as recited on page 9, lines 16-18 of the specification,  $I_{yy} = (0.46 * HV \text{ cc} + 77) \text{ kg-mm}^2$  and in lines 22-24  $I_{yy} = (0.46 * HV \text{ cc} + 107) \text{ kg-mm}^2$ , the first moment of inertia  $I_{yy}$  for a head volume of 376 cubic centimeters is computed 250 kilograms millimeters squared ( $\text{kg-mm}^2$ ) which is equal to approximately 77 plus .46 times the head volume 376 cubic centimeters (cc) and also equal to approximately 107 plus .46 times the head volume 310 cubic centimeters (cc) as recited in Claims I and 2 (Page 6, line [0092]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized a suitable volume to achieve a desired moment of inertia about the first and second axes.

The Applicant has neither claimed a specific volume or moment of inertia which satisfies the claimed equations nor presented any evidence to substantiate that the equations are critical for a certain volume only.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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9. Claims 3-4, 8-10 and 12-14 are rejected, as they are understood, under 35 U.S.C. 103(a) as being unpatentable over Helmstetter in view of Rugge et al. '160 (Rugge).

Helmstetter discloses the invention as recited above. However, Helmstetter fails to disclose the dimensions regarding the location of the center of gravity. Rugge teaches a club head (Figures 1-11; Column 4, lines 25-67; Column 5, lines 9-67; Column 8, lines 23-67; Column 10, lines 1-10) for a golf club, the club head comprising a strike face 11 and an outer shell defining a head volume of the club head, a center of gravity 2 (Figure 1 and 2), the center of gravity 2 lying below a horizontal centerline  $P_1$  (Figure 1; Column 4, lines 58-61) of the club head; the center of gravity 2 of the club head lies more than 1 millimeter below the horizontal centerline  $P_1$  as claimed by the Applicant in Claim 3; the club head having a second moment of inertia about a second axis that lies generally vertically and perpendicular to a generally horizontal first axis that extends parallel to the strike face, and the second moment of inertia is measured in units of kilograms millimeters squared ( $\text{kg-mm}^2$ ); the club head has a volume greater than or equal to 250 cubic centimeters (Column 5, lines 51-55); the club head further includes a hosel 120 and the center of gravity is located between 12 and 25 millimeters from an axis I-I' that lies along the center of the hosel ( see Delta 1 in Figure 2), as recited in Claims 8-10 and 12-14; and that the club head includes a weight pad (Figures 8 and 9; Column 7, lines 17-35).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the teachings of Rugge in the Helmstetter device to provide a golf club



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head in which a sweet area is arranged to coincide with a distribution of impacting points on the club head of an average golfer in order to increase a distance and directional stability of a ball.

10. Claims 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claim 1 above, and further in view of Helmstetter et al.'788 (Helmstetter'788) and Rugge.

The Helmstetter device discloses the invention as recited above. However, the Helmstetter device fails to disclose that the volume of the golf club head is less than 200 cc and dimensions for the location of the center of gravity. Helmstetter'788 teaches the use of a golf club head with the mass less than 250 grams (Figures 1-18; Column 2, lines 25-50, Column 3, lines 35-57) and the volume less than 200 cubic centimeters and greater than 300 cubic centimeters (Column 2, lines 32-35). Rugge teaches that the center of gravity 2 of the club head lies more than 2 millimeter below the horizontal centerline  $P_1$  as claimed by the Applicant in Claim 16 and that the center of gravity is located between 12 and 25 millimeters from an axis I-I' that lies along the center of the hosel ( see Delta 1 in Figure 2), as recited in Claims 17-19.

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the teachings of Helmstetter'788 and Rugge in the Helmstetter device to provide a golf club head in which the center of gravity is shifted to a desirable location to create a larger moment of inertia, such is taught by Helmstetter'788 (Column 1, lines 14-17).

11. Claims 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claim 1 above, and further in view of Hussey'390 (Hussey).

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The Helmstetter device discloses the invention as recited above. However, the Helmstetter device fails to disclose that the club head includes a plurality of weights. Hussey teaches the use of a golf club head with a plurality of weights (Figures 1- 30; Column 9, lines 23-41) lying below the horizontal centerline and perpendicular to the striking face.

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the teachings of Hussey in the Helmstetter device to provide a golf club head in which the center of gravity is shifted to a desirable location to create a larger moment of inertia.

12. Claims 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claim 1 above, and further in view of Hussey and Helmstetter'788.

The Helmstetter device discloses the invention as recited above. However, the Helmstetter device fails to disclose that the club head includes a plurality of weights positioned about front/back axis and secured to the sole plate. As recited above, Hussey teaches the use of a golf club head with a plurality of weights in various positions (Figures 1- 30; Column 9, lines 23-41) lying below the horizontal centerline and perpendicular to the striking face and also secured on the sole plate (Figures 20-23). Helmstetter'788 teaches the use of a golf club head with a total mass between 140 to 250 grams and having weight comprising 10% - 50% of the club head mass (Figures 1-18; Column 2, lines 25-50, Column 3, lines 35-57).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the teachings of Hussey and Helmstetter'788 in the Helmstetter device

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to provide a golf club head in which the center of gravity is shifted to a desirable location to create a larger moment of inertia.

***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U. S. Patent Application Publication No. US 2002/0094884, Hocknell et al., Pub Date July 18, 2002.

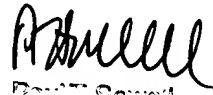
14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Varma whose telephone number is (703) 308-8335. The Examiner can normally be reached on Monday to Friday from 8:00 A.M. - 4:30 P.M. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's Supervisor, Paul Sewell, can be reached on (703) 308- 2126.

The Official fax phone number for the organization where this application or proceeding is assigned is (703) 872-9302 and the fax phone number After Final Office Action is (703) 872-9303. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1148.

September 25, 2002

Sneh Varma, Patent Examiner

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Paul T. Sewell  
Supervisory Patent Examiner  
Group 8700